What is claimed is:

1. A robot cleaner, comprising:

a robot cleaner body comprising,

a controlling portion which is programmed to control the robot cleaner to automatically run and clean a floor surface to be cleaned in accordance with predetermined set values;

a driving portion driven in accordance with a control signal from the controlling portion;

a dust suction portion for capturing and collecting dust by a suction motor; and

a hinge receiving portion protruding to oppose the floor surface to be cleaned;

a brush frame comprising a hinge protrusion pivotally connected to the hinge receiving portion, and a suction port sealingly connected with the dust suction portion of the robot cleaner body; and

a rotatable brush rotatably disposed between the brush frame and the brush cover, wherein the brush frame is ascended and descended in accordance with the condition of the floor surface to be cleaned.

2. The robot cleaner of claim 1, wherein the hinge receiving portion is protruded from a brush frame seating portion which is provided to the robot cleaner body.

3. The robot cleaner of claim 2, wherein the brush frame comprises:

a hinge receiving portion insertion hole corresponding in position to the hinge receiving portion to allow the hinge receiving portion to pass therethrough, and

a hinge protrusion formed on an inner circumference of the hinge receiving portion insertion hole.

4. The robot cleaner of claim 3, wherein the hinge protrusion comprises:

a boss portion protruding from the inner circumference of the hinge receiving portion insertion hole substantially to a shape of a cylindrical column; and

a disc member for preventing the boss portion from separating in an axial direction.

5. The robot cleaner of claim 1, wherein the brush frame is pivoted between a first position and a second position to prevent an excessive contact to the floor surface to be cleaned, the first position being for a hard floor surface as a wooden floor and the second position being for a hairy floor surface as a carpet having plural bristles embedded therein, and wherein the brush frame in the first position is pivoted about the hinge protrusion by its own weight to contact the floor surface to be cleaned, and the brush frame in the second position is pivoted about the hinge protrusion by the support of the upper portion of bristles of the floor surface to be cleaned.

6. The robot cleaner of claim 1, wherein the brush frame comprises a rotatable brush seating groove in which the rotatable brush is rotatably seated, and a suction passage for fluidly communicating the rotatable brush seating groove with the suction port.

7. The robot cleaner of claim 1, wherein the brush cover comprises a suction hole which is divided by a plurality of rib members.

8. The robot cleaner of claim 6, wherein the rotatable brush comprises at least one spiral blade formed on an outer circumference thereof.

9. The robot cleaner of claim 8, wherein the spiral blade is cut in the locations corresponding to the plurality of rib members.

10. The robot cleaner of claim 1, wherein the brush cover locking means comprises:

at least one locking member rotatably provided to the brush cover through a locker mounting hole defined in the brush cover to rotate clockwise and counterclockwise directions, and includes a locker which has a long axis and a short axis on one end, and a circular manipulation portion on another end to rotatably move the locker between a locking position and an unlocking position; and

at least one locking hole corresponding in position with the locking member of the brush frame, and also corresponding in shape with the locker.

11. The robot cleaner of claim 10, wherein a linear protrusion is formed across a center of the circular manipulation portion, and a position mark is formed on a circumference of the locker mounting hole to indicate locking and unlocking positions of the locker.